FIG. 1

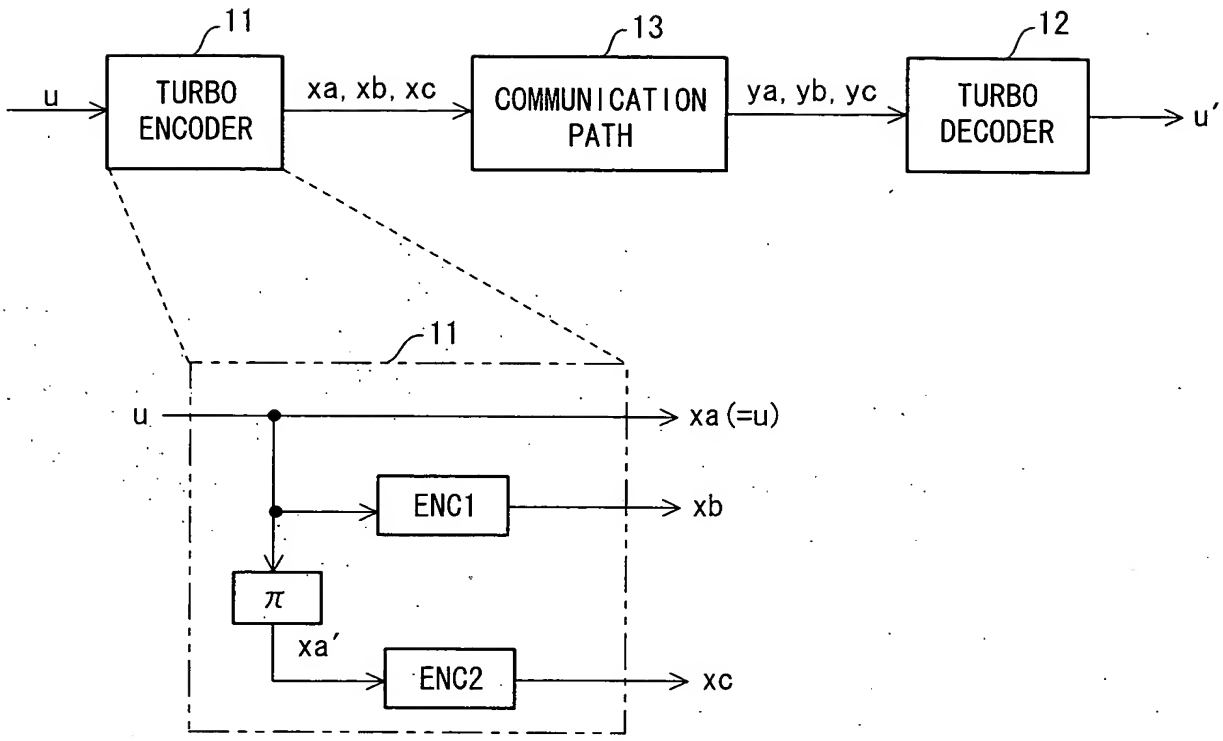
11
13
12
u
TURBO ENCODER
xa, xb, xc
COMMUNICATION PATH
ya, yb, yc
TURBO DECODER
u'
11
u
xa (=u)
ENC1
xb
π
xa'
ENC2
xc

FIG. 2

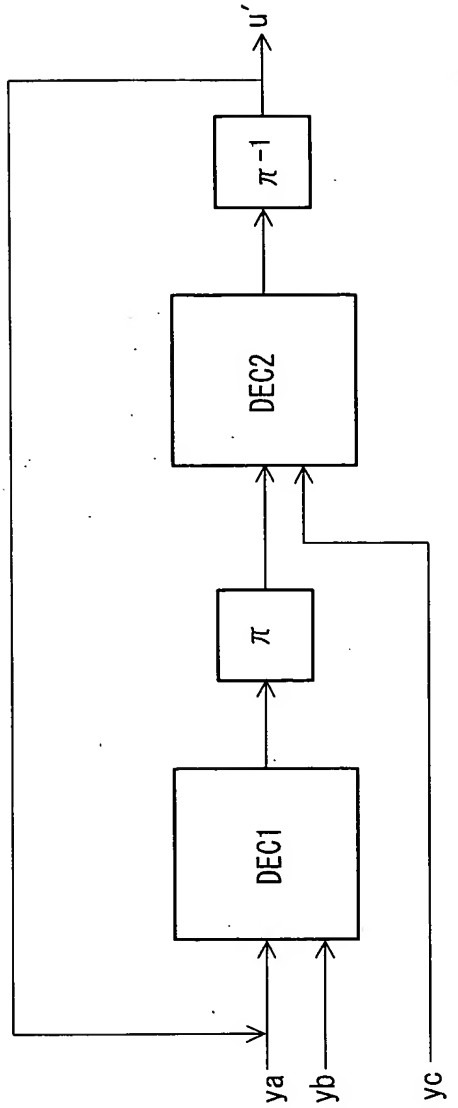

FIG. 3

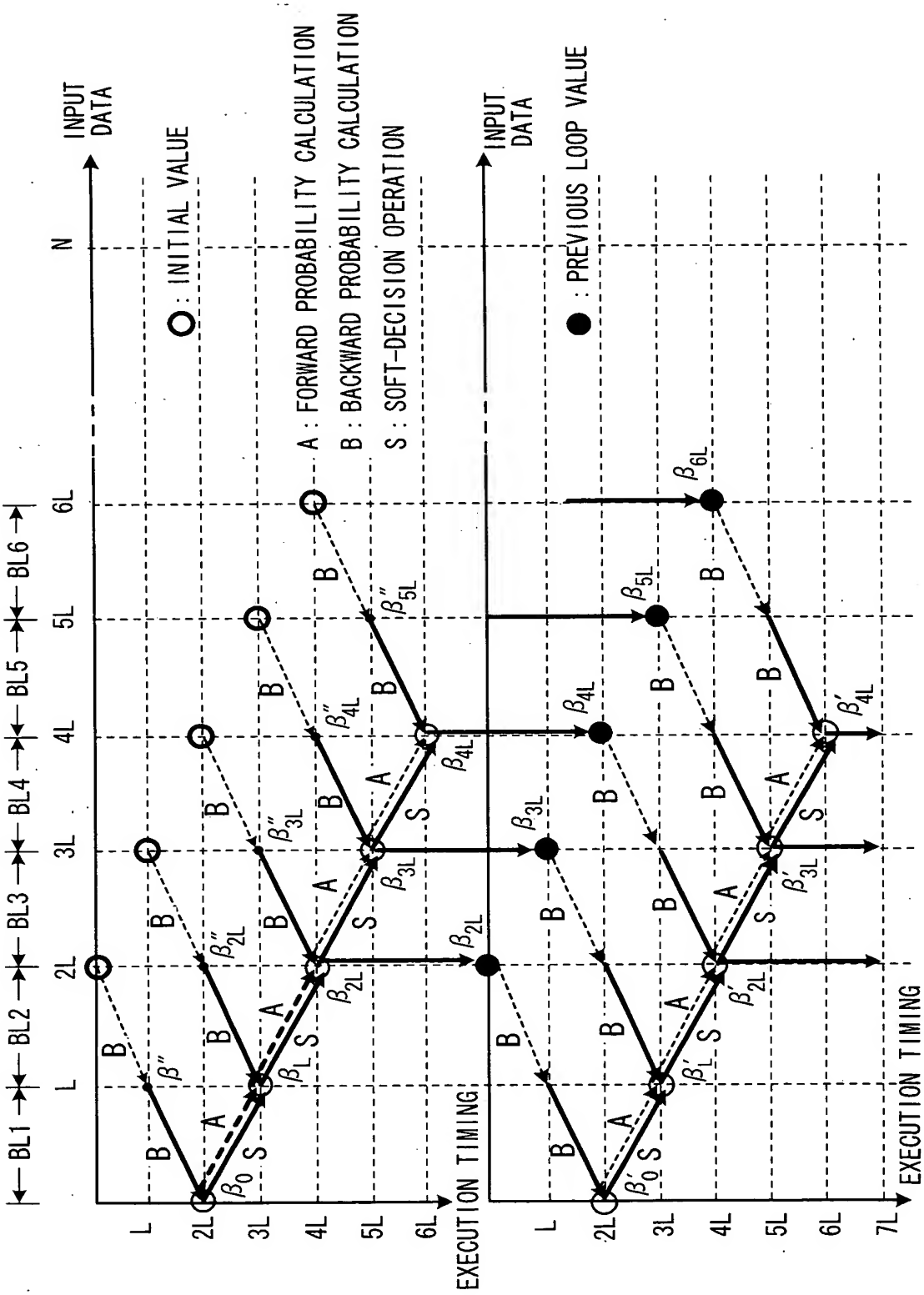
BL1
BL2
BL3
BL4
BL5
BL6
INPUT DATA
N
L
2L
3L
4L
5L
6L
7L
: INITIAL VALUE
: PREVIOUS LOOP VALUE
A : FORWARD PROBABILITY CALCULATION
B : BACKWARD PROBABILITY CALCULATION
S : SOFT-DECISION OPERATION
EXECUTION TIMING
EXECUTION TIMING

FIG. 4

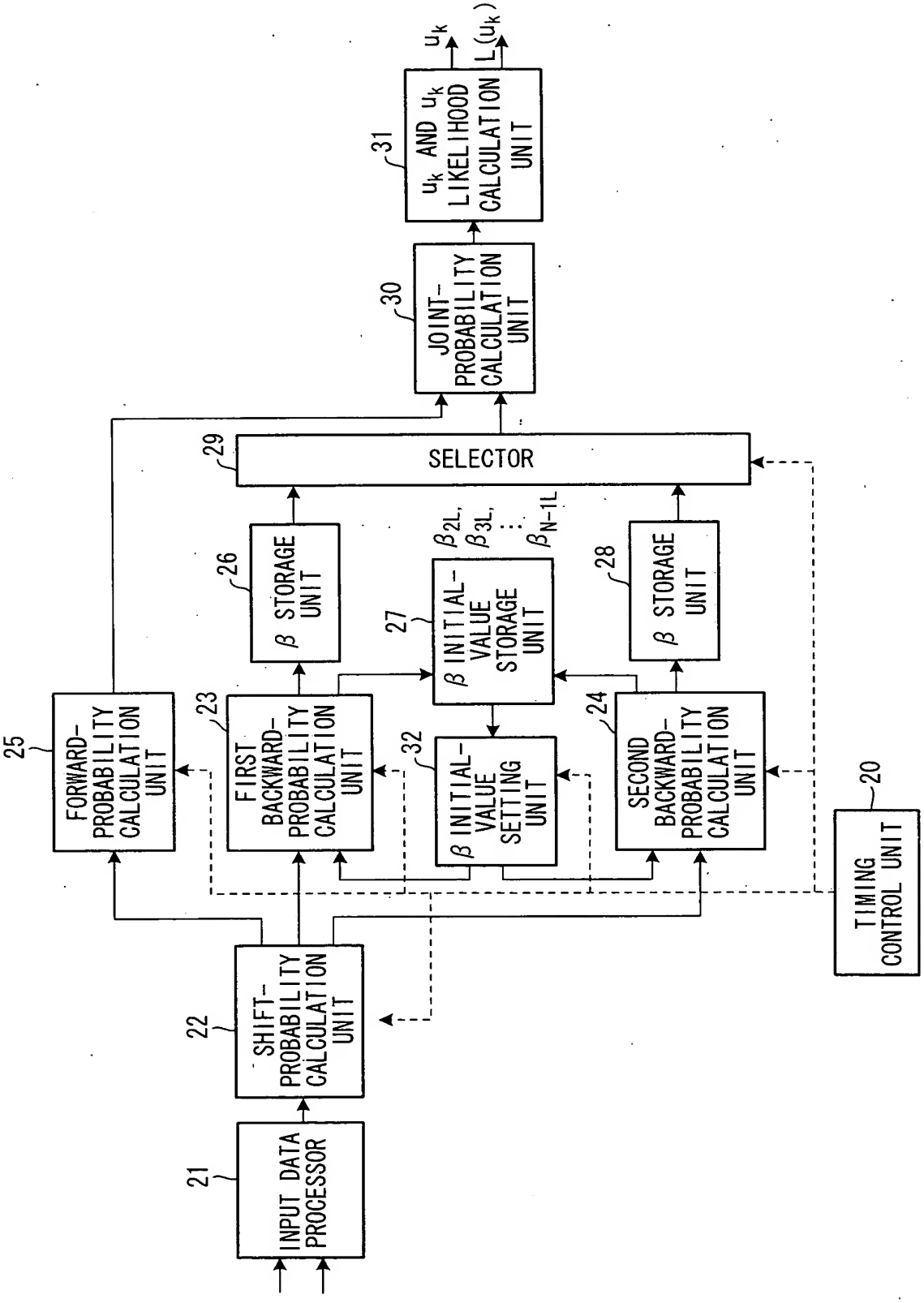
INPUT DATA PROCESSOR
21
SHIFT-PROBABILITY CALCULATION UNIT
22
FORWARD-PROBABILITY CALCULATION UNIT
25
FIRST BACKWARD-PROBABILITY CALCULATION UNIT
23
SECOND BACKWARD-PROBABILITY CALCULATION UNIT
24
β INITIAL-VALUE SETTING UNIT
32
β INITIAL-VALUE STORAGE UNIT
27
β2L, β3L, ... βN-1L
β STORAGE UNIT
26
β STORAGE UNIT
28
SELECTOR
29
JOINT-PROBABILITY CALCULATION UNIT
30
uk AND uk LIKELIHOOD CALCULATION UNIT
31
uk
L(uk)
TIMING CONTROL UNIT
20

FIG. 5

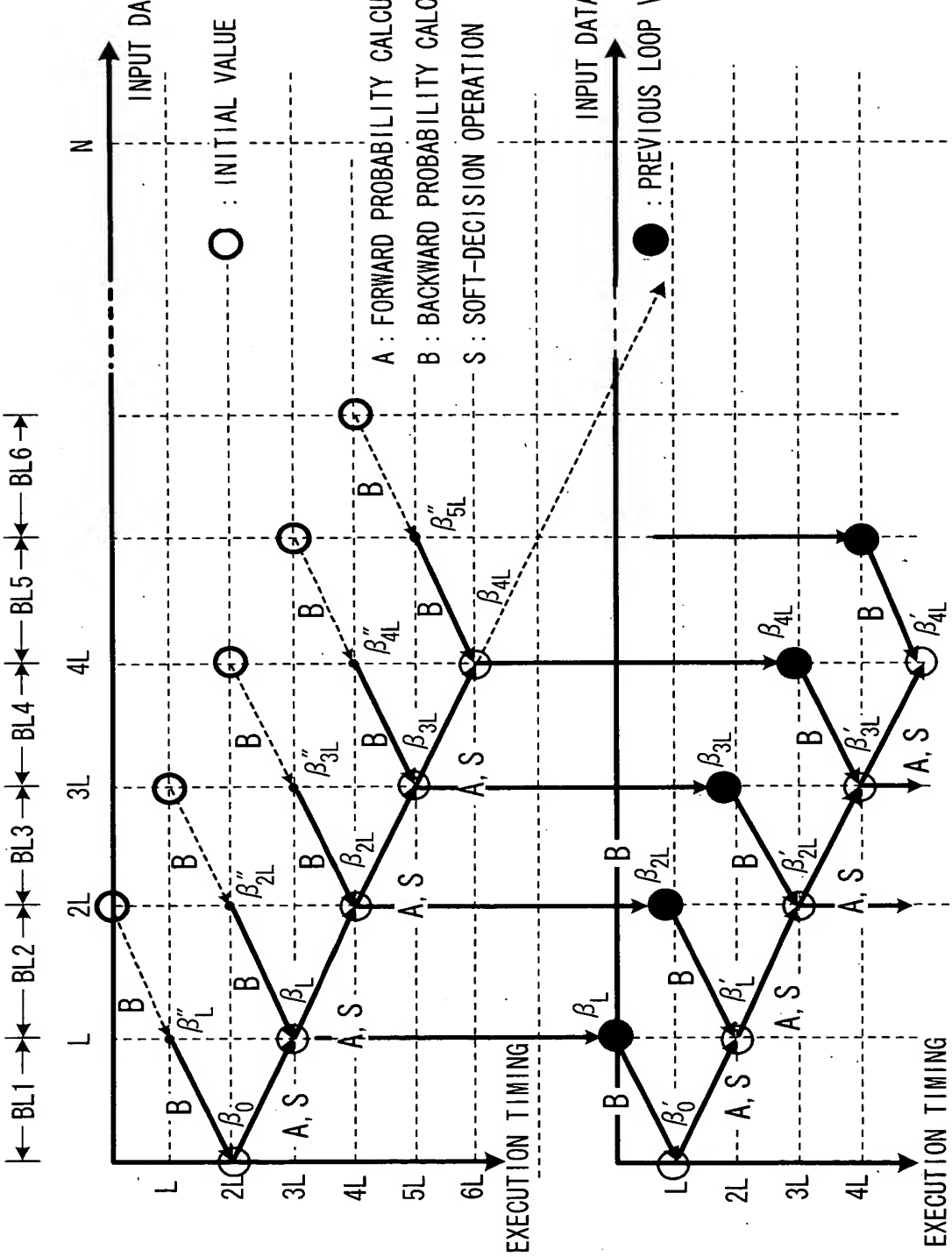
BL1
BL2
BL3
BL4
BL5
BL6
L
2L
3L
4L
N
INPUT DATA
: INITIAL VALUE
A : FORWARD PROBABILITY CALCULATION
B : BACKWARD PROBABILITY CALCULATION
S : SOFT-DECISION OPERATION
EXECUTION TIMING
5L
6L
INPUT DATA
: PREVIOUS LOOP VALUE
EXECUTION TIMING

FIG. 6

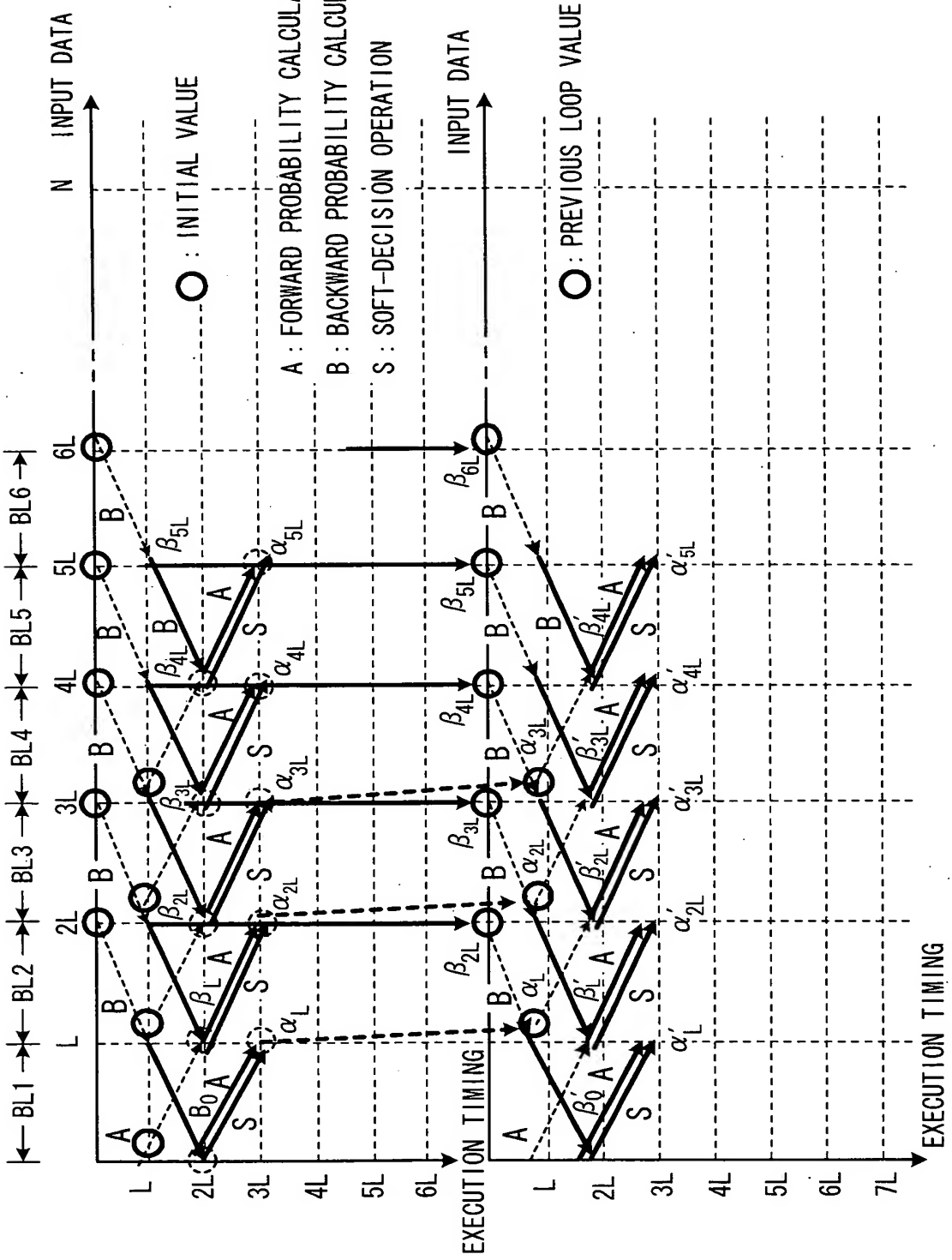
BL1
BL2
BL3
BL4
BL5
BL6
N INPUT DATA
: INITIAL VALUE
A : FORWARD PROBABILITY CALCULATION
B : BACKWARD PROBABILITY CALCULATION
S : SOFT-DECISION OPERATION
INPUT DATA
: PREVIOUS LOOP VALUE
EXECUTION TIMING
EXECUTION TIMING
L
2L
3L
4L
5L
6L
7L

FIG. 7

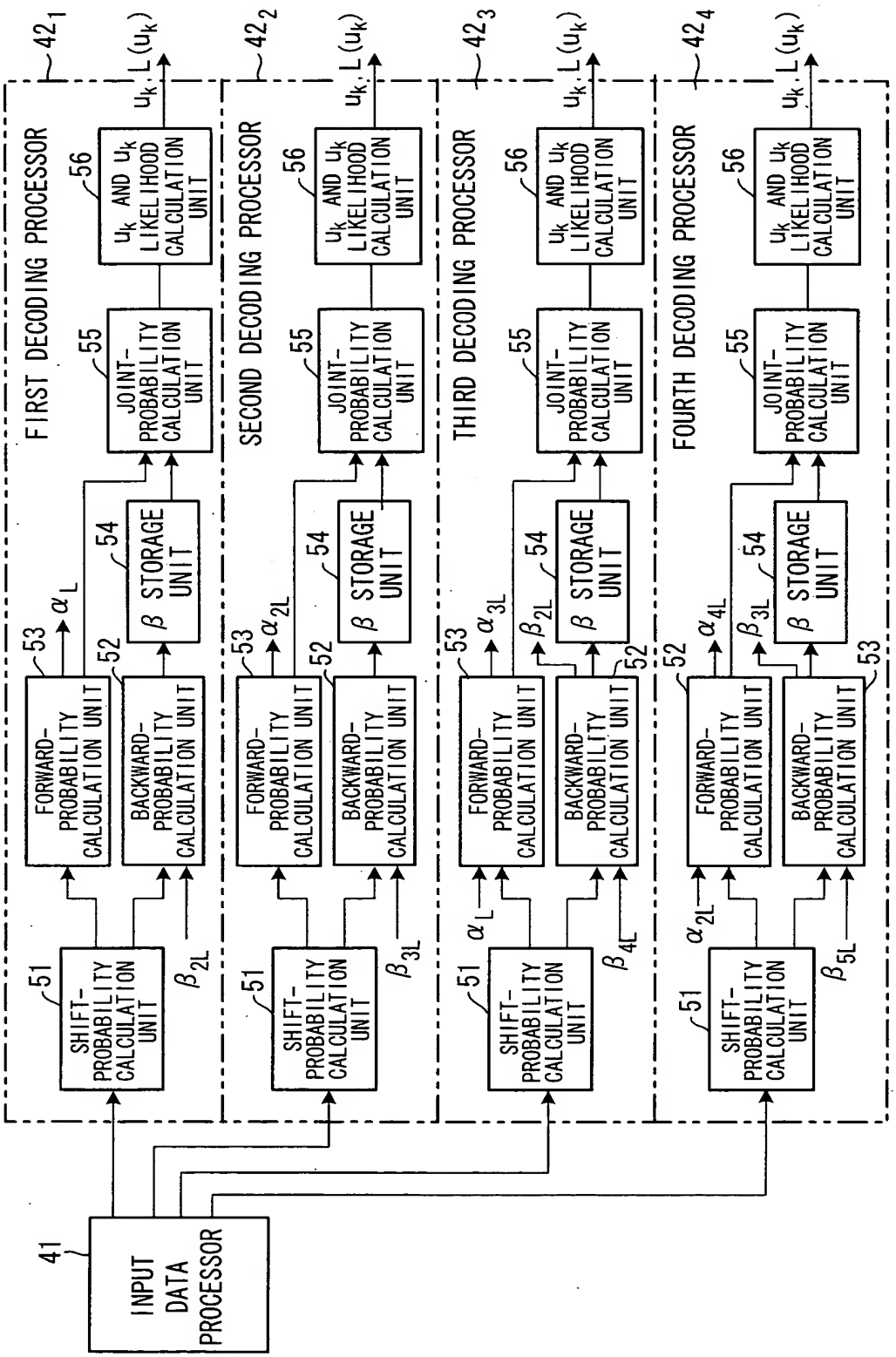
41
INPUT DATA PROCESSOR
FIRST DECODING PROCESSOR
SECOND DECODING PROCESSOR
THIRD DECODING PROCESSOR
FOURTH DECODING PROCESSOR
SHIFT-PROBABILITY CALCULATION UNIT
FORWARD-PROBABILITY CALCULATION UNIT
BACKWARD-PROBABILITY CALCULATION UNIT
β STORAGE UNIT
JOINT-PROBABILITY CALCULATION UNIT
uk AND uk LIKELIHOOD CALCULATION UNIT
uk, L(uk)

FIG. 8

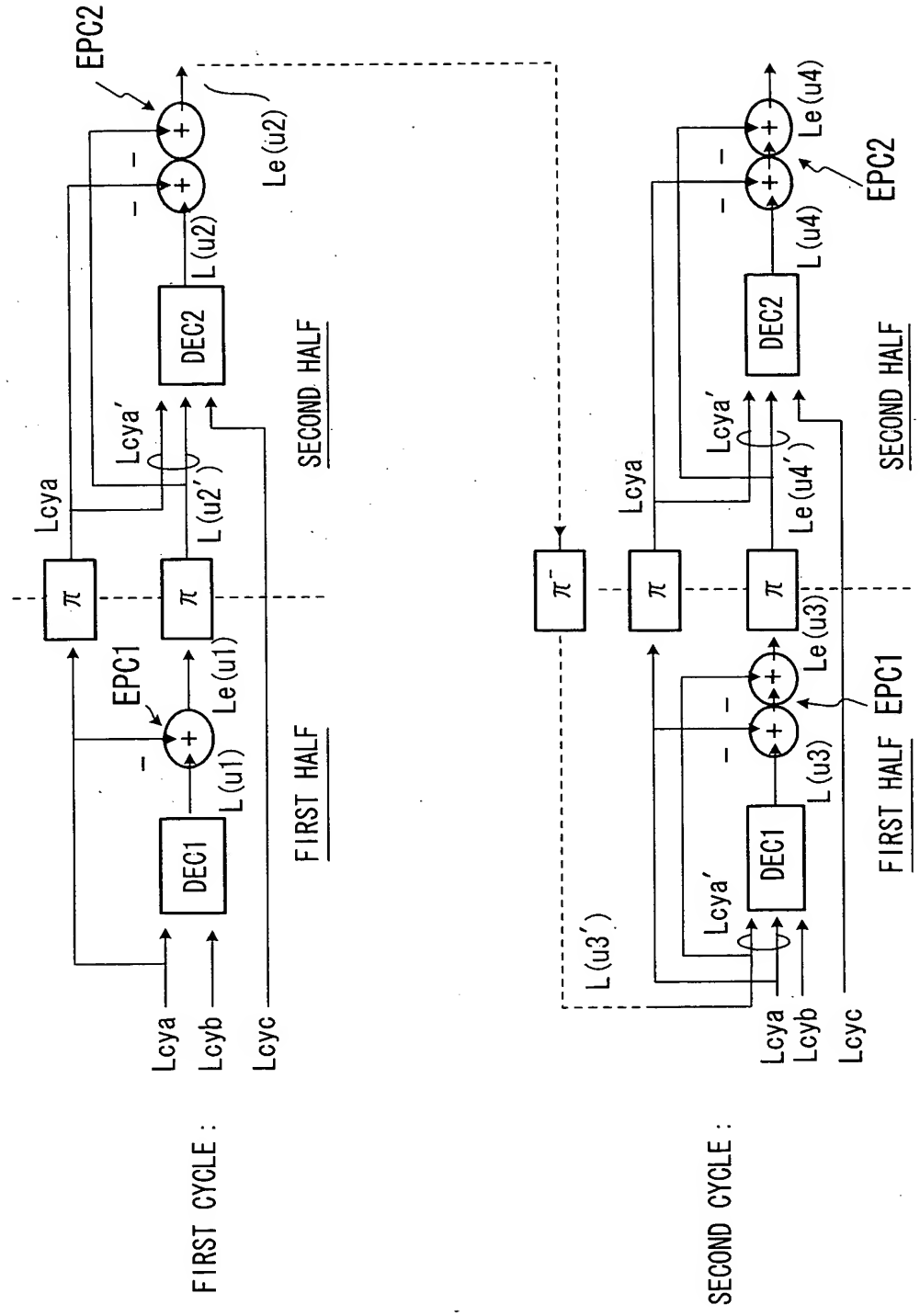
FIRST CYCLE :
Lcya
Lcyb
Lcyc
DEC1
L(u1)
EPC1
Le(u1)
π
Lcya
Lcya'
L(u2')
DEC2
L(u2)
EPC2
Le(u2)
FIRST HALF
SECOND HALF
SECOND CYCLE :
π⁻
L(u3')
DEC1
L(u3)
EPC1
Le(u3)
Le(u4')
DEC2
L(u4)
EPC2
Le(u4)

FIG. 9 PRIOR ART

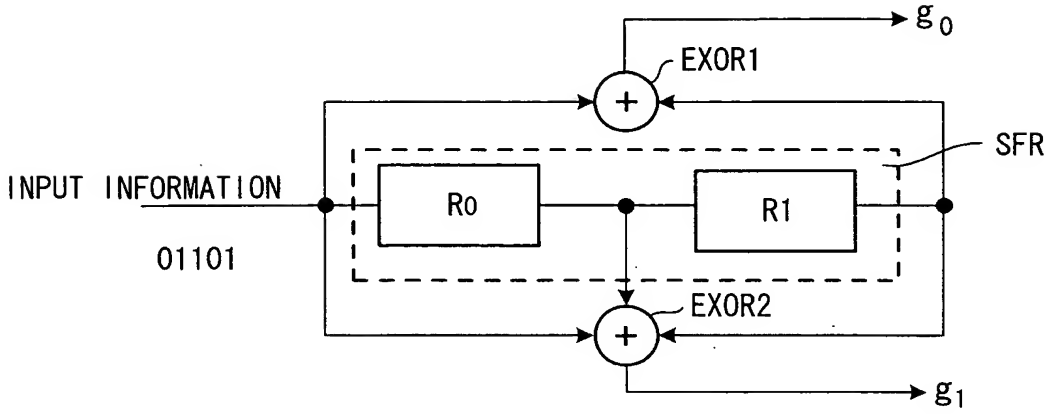

FIG. 10 PRIOR ART

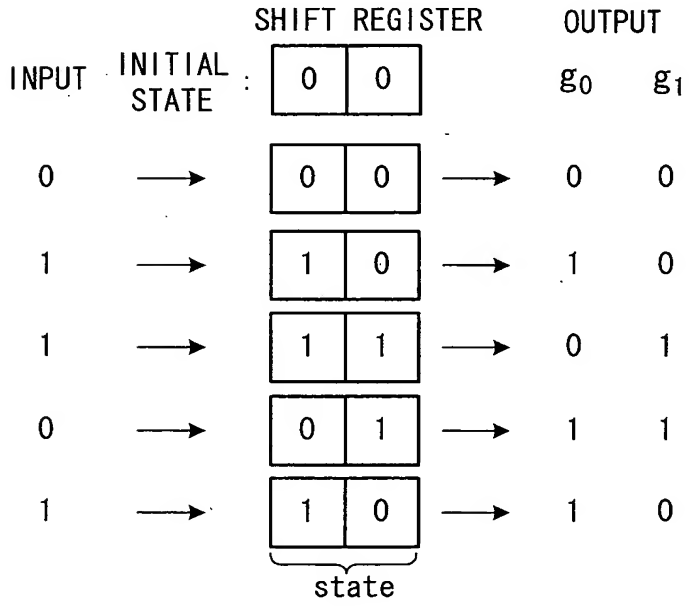

FIG. 11 PRIOR ART

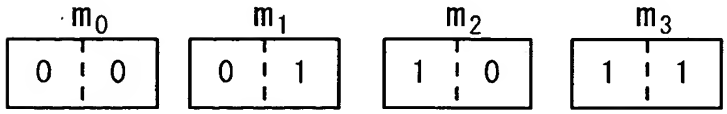

FIG. 12 PRIOR ART

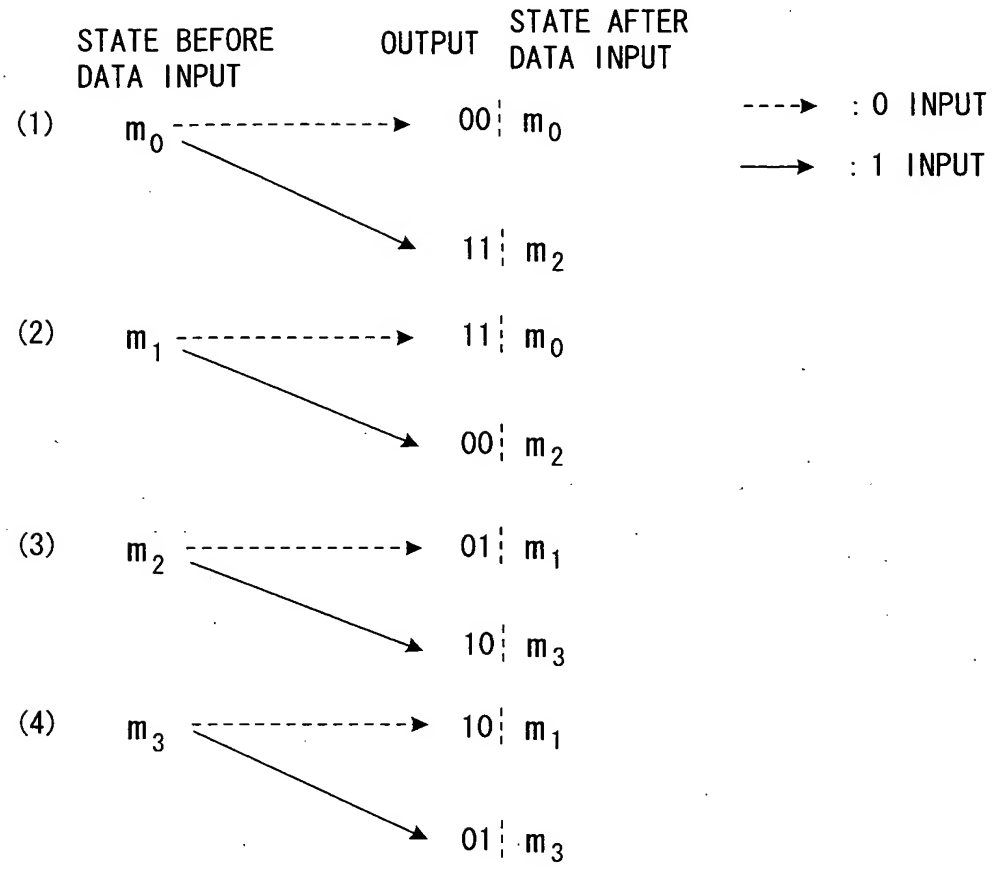

FIG. 13 PRIOR ART

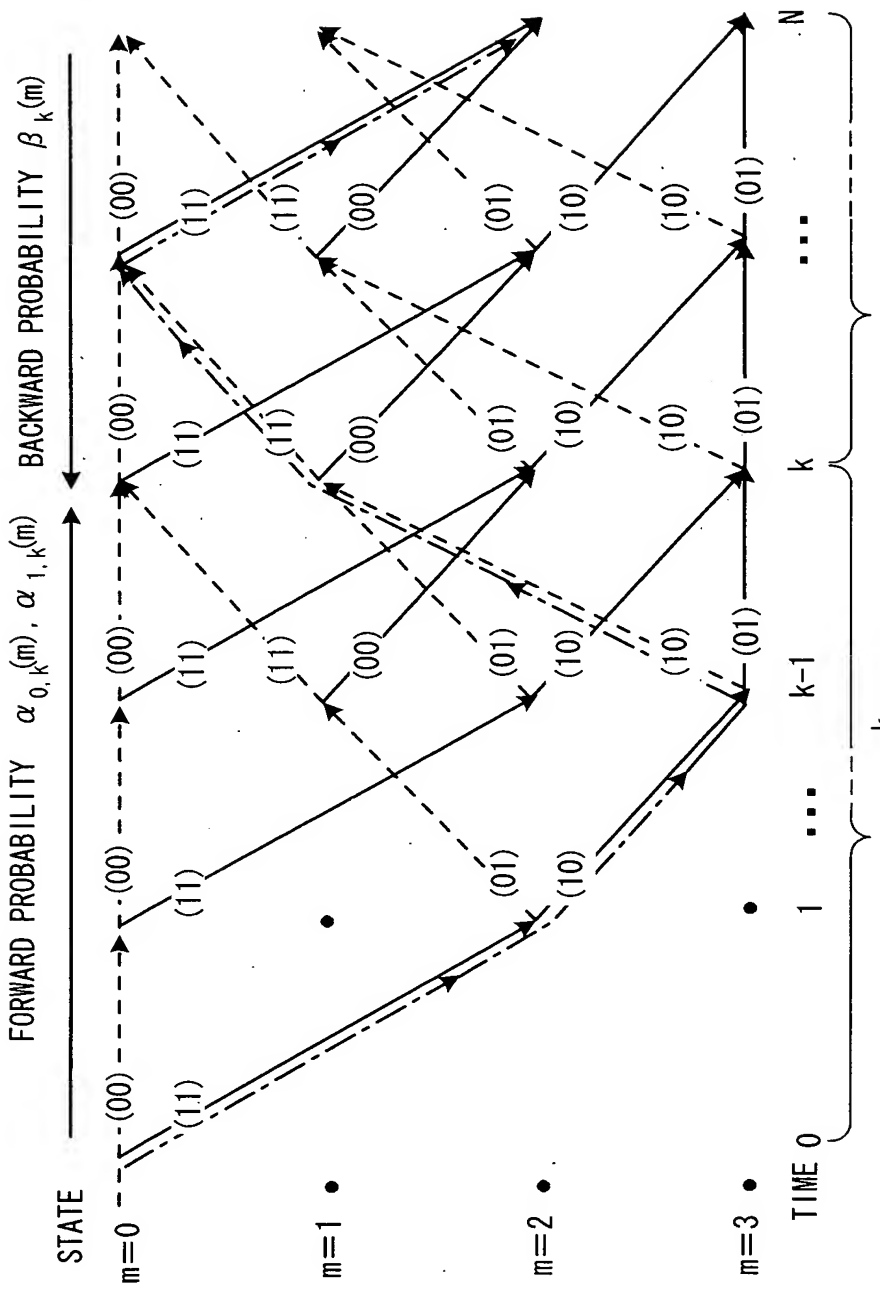

FIG. 14 PRIOR ART

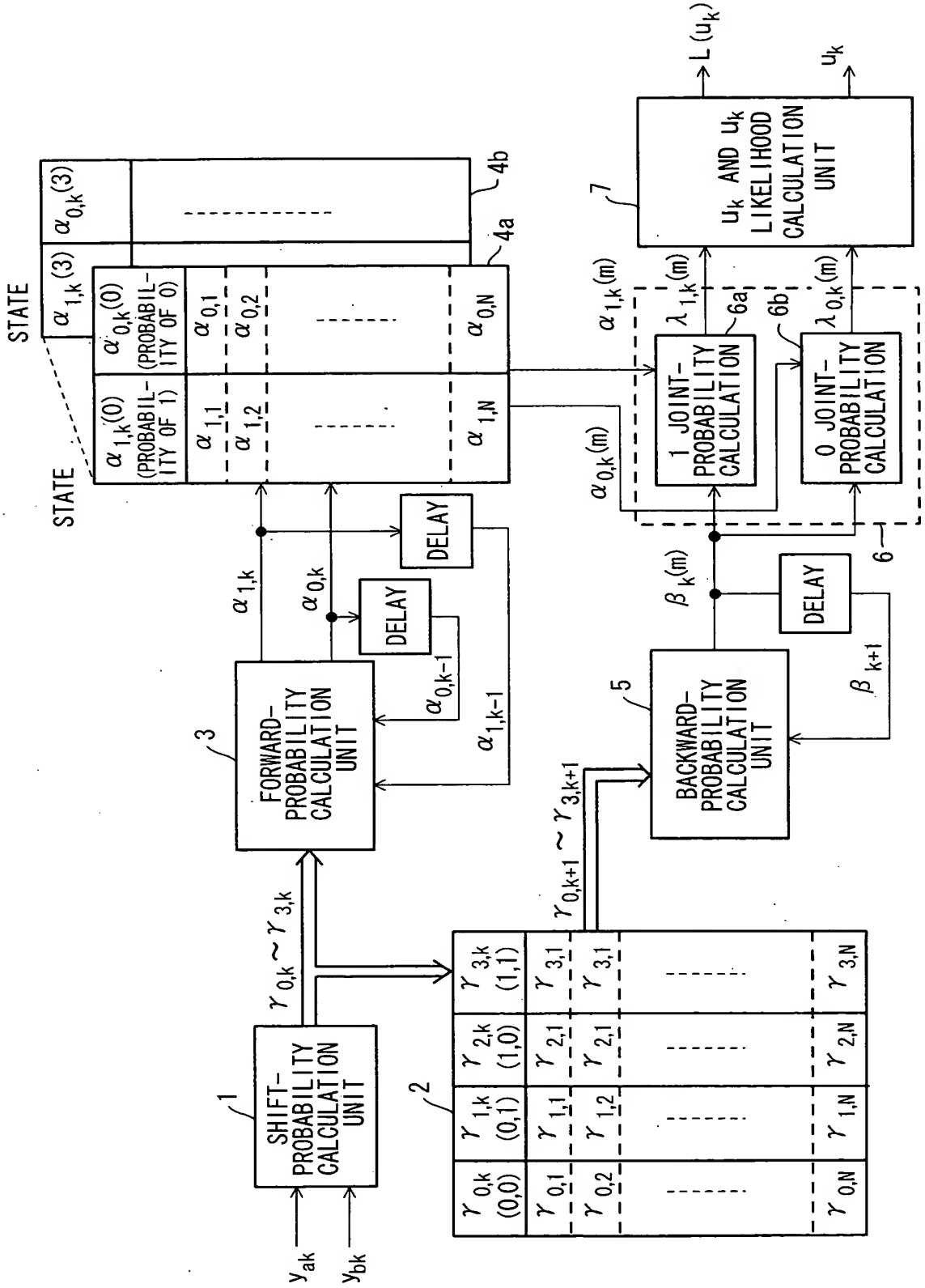

FIG. 15 PRIOR ART

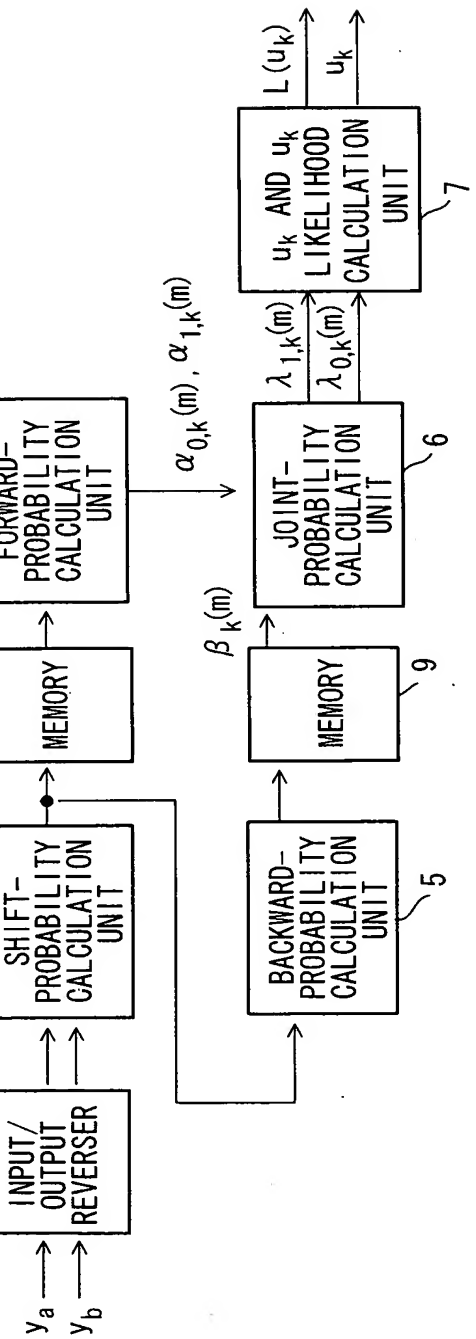

FIG. 16 PRIOR ART

FIG. 17 PRIOR ART

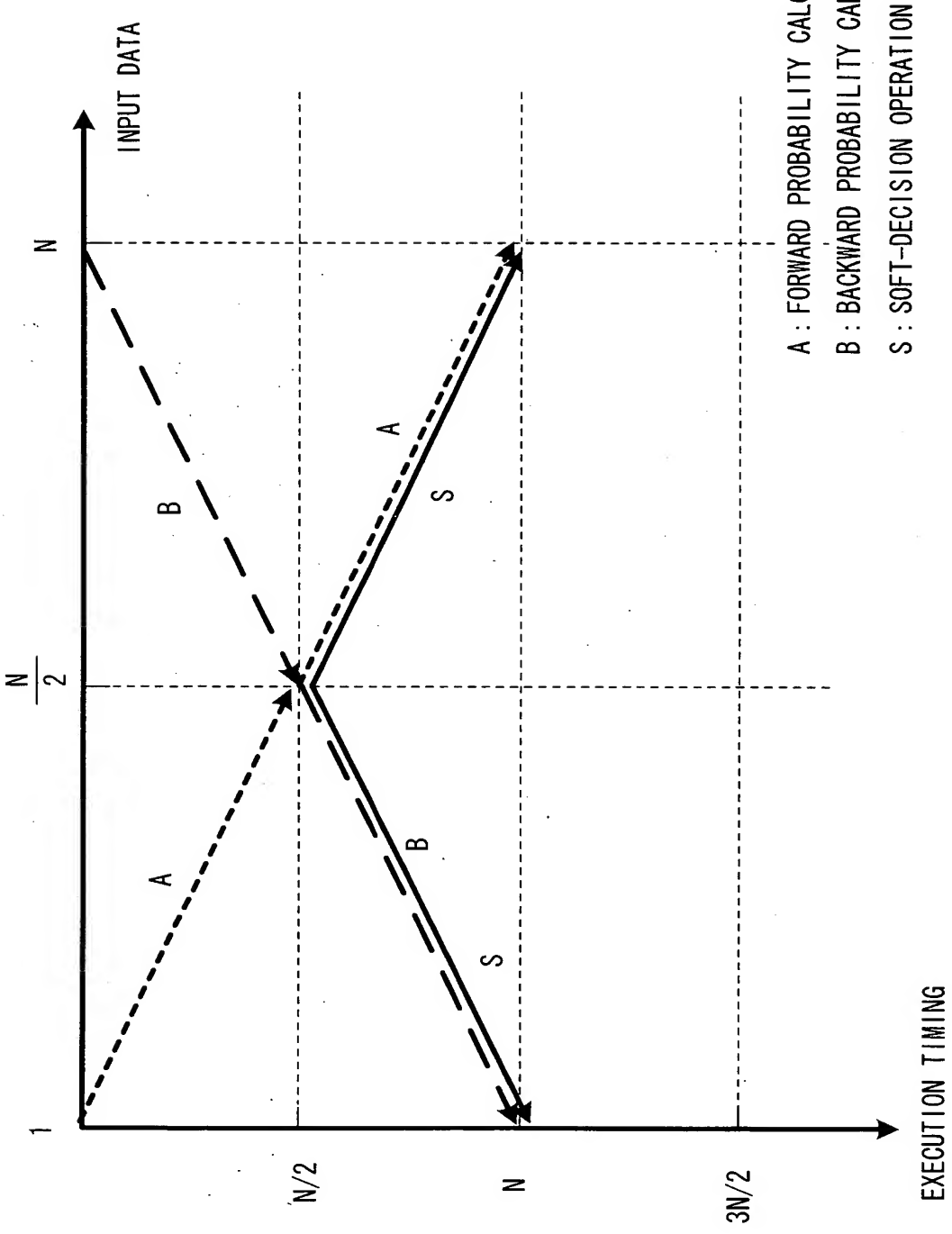

FIG. 18 PRIOR ART

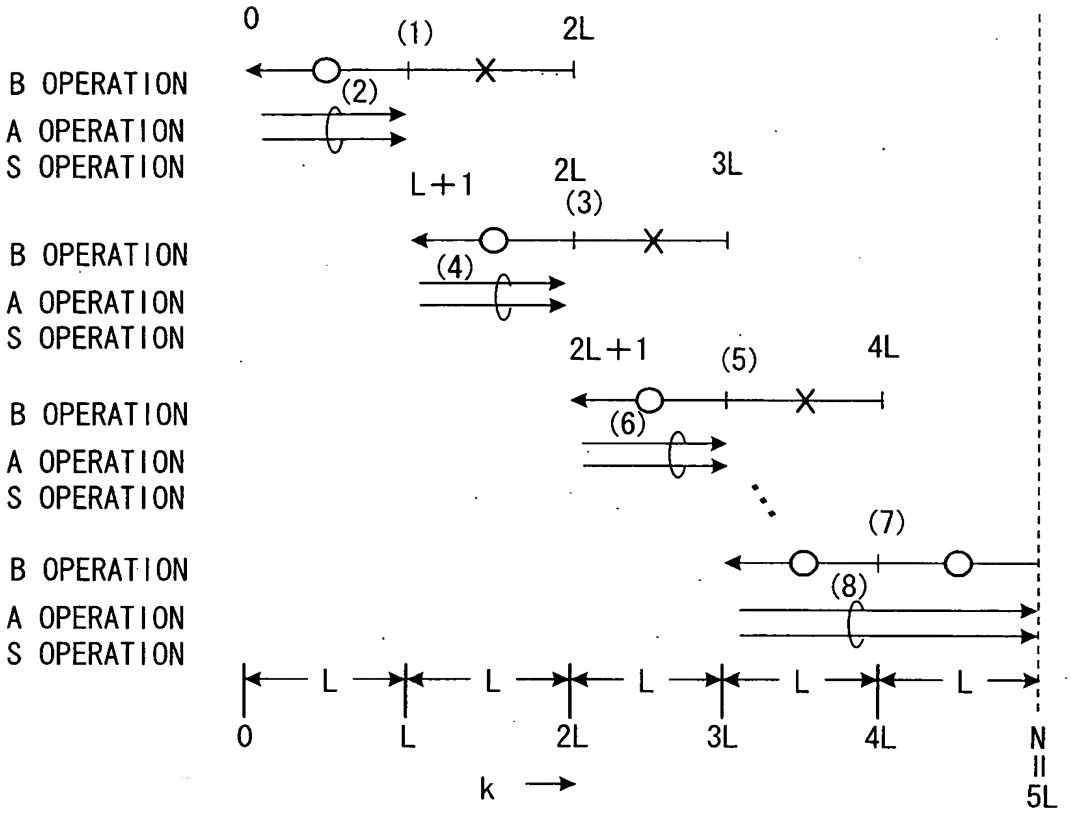

FIG. 19A PRIOR ART

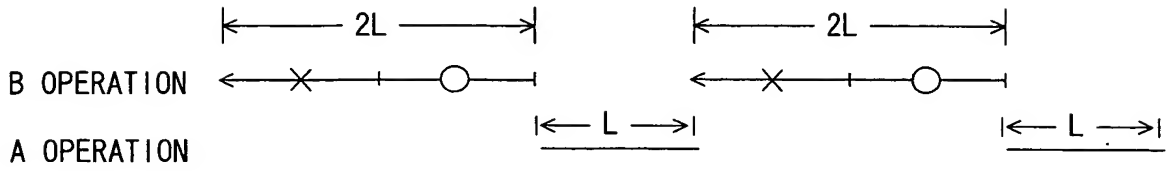

FIG. 19B PRIOR ART

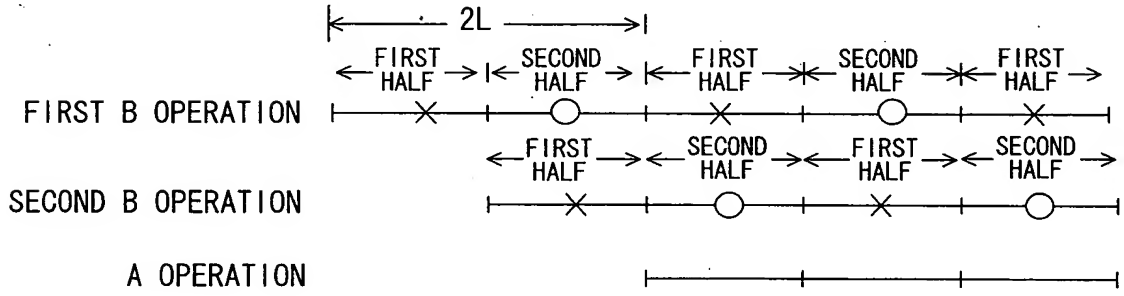

FIG. 20 PRIOR ART